

ABSTRACT OF THE DISCLOSURE

An apparatus for generating hydrogen gas in which hydrogen gas of a high purity is supplied to a hydrogen-utilizing device by using a decahydronaphthalene/naphthalene reaction. The apparatus includes a storage tank in which decahydronaphthalene is stored as a crude fuel, a reaction tank which has a catalyst and a heater for heating the catalyst and which causes dehydrogenation of decahydronaphthalene supplied from the storage tank to the heated catalyst, and a separation tank in which hydrogen-rich gas is separated out from naphthalene and hydrogen gas supplied from the reaction tank by using a hydrogen separation film and from which the separated hydrogen gas is discharged.